

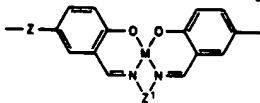
NaCl). A hydrolyzed copolymer soln. (A) was prep'd. by dissolving 100 g III in 900 mL water and refluxing until the pH value of the soln. reached 4.6. A blended polymer soln. (B) was prep'd. by dissolving 150 g III in 1350 mL water and mixing 150 mL of this soln. with 50 mL B. This soln. (50 g) was mixed with 50 g 10% aq. limed pigskin gelatin and 40 g heat transfer oil at 50° and stirred at 50° until the droplet size was about 25  $\mu$ . After the addn. of 125 g water, the dispersion was cooled to 5-10°, giving a continuous, uniform coacervate coating on the oil droplets.

91:58052p High-molecular-weight phosphoric acid or phosphonic acid esters. Mitschke, Karl Heinz; Schliebs, Reinhard (Bayer A.-G.) Ger. Offen. 2,739,843 (Cl. C08G8/08), 15 Mar 1979, Appl. 03 Sep 1977; 14 pp. The reaction of (PhO)<sub>3</sub>PO, cresyl di-Ph phosphate (I), Ph isopropylphenyl phosphate, MeP(O)(OPh)<sub>2</sub>, brominated I, or a similar ester with paraformaldehyde (II) or trioxane at 10-120° in the presence of H<sub>2</sub>SO<sub>4</sub> gives high-mol.-wt. esters in which arom. rings are linked by CH<sub>2</sub> groups. The esters are useful as additives for polymers, etc. Thus, the reaction of 163 g (PhO)<sub>3</sub>PO with 7.5 g II in the presence of 150 g H<sub>2</sub>SO<sub>4</sub> during 0.5 h at 70° gave high-mol.-wt. esters with viscosity 6200 cP.

91:58053q Transparent polyamides. Pfeifer, Josef (Ciba-Geigy A.-G.) Ger. Offen. 2,846,481 (Cl. C08G69/26), 03 May 1979, Swiss Appl. 77/13,148, 28 Oct 1977; 18 pp. Transparent polyamides are prep'd. from terephthalic acid (I), 1,10-diamino-1,10-dicycloalkyldecane, and an  $\omega$ -amino acid, lactam, or dicarboxylic acid-diamine salt. Thus, a salt formed from I and 1,10-diamino-1,10-dicyclohexyldecane was condensed (85%) at 280° for 8 h with 15% caprolactam to give a glass-clear polyamide [70727-61-6] having soln. viscosity (0.5% soln. in cresol at 25°) 0.80 dL/g and glass transition temp. 149°. A sheet pressed from the polyamide at 270° had H<sub>2</sub>O absorption (after 1 wk at room temp. and 65% relative humidity) 1.3% and showed no change in transparency after 6 h in boiling H<sub>2</sub>O.

91:58054r Acylated poly(oxyalkylene) polyamines. Vogel, Paul W. (Lubrizol Corp.) U.S. 4,151,173 (Cl. 260-326.5F; C07G103/87), 24 Apr 1979, Appl. 144,262, 17 May 1971; 13 pp. Cont.-in-part of U.S. 3,806,456. Oil-sol. acylated polyoxy-alkylenepolyamines (A) having demulsifying properties and useful as additives for a variety of oleaginous materials such as lubricating oils and gasoline are prep'd. from the reaction of a carboxylic acid or carboxylic acid-producing comp'd. with a high-mol.-wt. A. Thus, a polyisobutenyl succinic anhydride, prep'd. by treating chlorinated polyisobutylene with maleic anhydride at 200°, is mixed (1320 parts) with 321 parts polyoxypropylenediamine (mol. wt. ~1000) at 150-5° for ~1.5 h while blowing with N. After filtration, a product having N content 0.52% was obtained. Use of the product (0.1%) in a mineral lubricating oil compn. during operation of an automobile engine gave aq. emulsion deposits on the rocker-arm cover 6.5 (on a scale of 0-10, where 10 represents max. cleanliness) after 6 days operation.

91:58055s Gas absorbent. Hata, Seiji; Tsuchida, Hidetoshi Jpn. Kokai Tokkyo Koho 79 38,287 (Cl. B01D53/16), 22 Mar 1979, Appl. 77/104,596, 31 Aug 1977; 4 pp. Gas absorbents



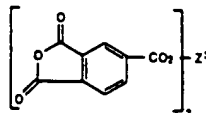
contained a polymeric Schiff base complex having  $\geq 2$  units/mol. with units represented by the structure I ( $Z = \text{CH}_2, \text{SO}_2, \text{CMe}_2, \text{O}, \text{or } \text{S}_2$ ;  $Z^1 = \text{alkylene, phenylene, or cycloalkylene}$ ) and an addnl. ligand for the complex, i.e. C<sub>6</sub>H<sub>5</sub>N, imidazole, aliph. amines, polymers or copolymers of 4-vinylpyridine or vinylimidazole, polylysine. The product absorbs O, CO, and N oxides, without forming a polynuclear complex and can be used as a soln., gel, resin, or film. Thus, 2.56 g 5,5'-methylenebis(salicylaldehyde) in 200 mL THF was mixed with 0.6 g ethylenediamine in 100 mL THF 30 min each at room temp. and 50° to give 93% polymer. Co(OAc)<sub>2</sub>·4H<sub>2</sub>O (2.50 g) in 100 mL THF was added slowly to 2.8 g of the polymer in 300 mL THF during reflux under N, and the mixt. was refluxed 3 h to give a complex that was mixed (0.337 g) with 1.04 g styrene-4-vinylpyridine (II) copolymer (mol. wt. 11,400 and II content 23 mol%) in THF to give a mixt. that absorbed 13 mL O within 10 min. K. Kodama

91:58056t Manufacture of aromatic polyesters. Sekihara, Takeshi; Nagaoka, Kenji; Niwano, Masahiro; Teshima, Hitoshi; Maruyama, Takashi; Saito, Teruo (Sumitomo Chemical Co., Ltd.) Jpn. Kokai Tokkyo Koho 79 34,393 (Cl. C08G63/38), 13 Mar 1979, Appl. 77/101,212, 23 Aug 1977; 7 pp. Arom. polyesters were prep'd. by interfacial polymn. in the presence of 0.1-5 equiv.-% (based on acid component) PR<sub>3</sub> or P(X)R<sub>3</sub> (R = Cl, Br; X = O, S). For example, a soln. from bisphenol A 80.6, NaOH 30.63, PhOH 1.99, Na<sub>2</sub>SO<sub>4</sub> 0.14, PhCH<sub>2</sub>NMe<sub>2</sub>Cl 0.4, and water 1160 parts was stirred with a soln. from POCl<sub>3</sub> 0.363, p-CaH<sub>4</sub>(COCl)<sub>2</sub> 35.5, m-CaH<sub>4</sub>(COCl)<sub>2</sub> 35.5, and ClCH<sub>2</sub>CH<sub>2</sub>Cl 7.26 parts to give a polyester [39281-59-9] with better resistance to

heat, hot water, and fire and better workability than that prep'd. without POCl<sub>3</sub>.

91:58057u Absorbent resins. Nakai, Masahiro (Sanyo Chemical Industries, Ltd.) Jpn. Kokai Tokkyo Koho 79 37,188 (Cl. C08F251/00), 19 Mar 1979, Appl. 77/103,925, 29 Aug 1977; 6 pp. Amylose (I) was polymd. with water-sol. monomers (or their precursors) and crosslinking monomers, and optionally hydrolyzed, to give absorbent resins. For example, I 50, H<sub>2</sub>O 750, acrylic acid 80, (CH<sub>2</sub>:CHCONH)<sub>2</sub>CH<sub>2</sub> 1, 30% H<sub>2</sub>O<sub>2</sub> 0.2, and L-ascorbic acid 0.1 part were stirred at 40° for 5 h and neutralized with 30% NaOH to give a copolymer [70824-74-7] gel absorbing 350 times its wt. of H<sub>2</sub>O; the H<sub>2</sub>O-contg. gel could be stored >3 mo.

91:58058v Polyesters with metallic ion bonding. Matsuda, Hideaki; Dohi, Hidemi (Okura Industrial Co., Ltd.) Jpn. Kokai Tokkyo Koho 79 31,496 (Cl. C08G63/68), 08 Mar 1979, Appl. 77/96,924, 15 Aug 1977; 5 pp. The title polymers were



prep'd. from (HOZ-O<sub>2</sub>CZ'-CO<sub>2</sub>)<sub>2</sub>M (I, M = divalent metal; Z<sup>1</sup> = dibasic acid anhydride residue; Z<sup>2</sup>OH = hydroxyalkyl, hydroxy-alkoxyalkyl), II (Z<sup>3</sup> = glycol residue), and a monoepoxide. For example, I (M = Ca; Z<sup>1</sup> = o-C<sub>6</sub>H<sub>4</sub>; Z<sup>2</sup> = CH<sub>2</sub>CH<sub>2</sub>) 4.7, II (Z<sup>3</sup> = polyethylene glycol residue with mol. wt. 200) 54.8, and glycidyl Ph ether 30 parts were cured at 120° (4 h) to an insol., nonfusible, hard, and tough polyester [69418-47-9].

91:58059w Manufacture of stable acrylic emulsions. Kobashi, Toshiyuki; Shiota, Hiroaki; Nakajima, Shigeru (Japan Exlan Co., Ltd.) Jpn. Kokai Tokkyo Koho 79 39,486 (Cl. C08F220/44), 26 Mar 1979, Appl. 77/106,138, 02 Sep 1977; 8 pp. Stable acrylic emulsions were prep'd. by continuous polymn. at 100-80° in the presence of a persulfate, of a monomer mixt. contg. comonomers imparting >2 x 10<sup>-5</sup> mol/g (polymer) of acid (or acid salt) groups to the final polymers. For example, acrylonitrile 1088, Me acrylate 148, methacrylic acid 74, 15% aq. Na p-styrenesulfonate 137, 3.8% aq. (NH<sub>4</sub>)<sub>2</sub>S<sub>2</sub>O<sub>8</sub> 150, and water 1900 mL/min were continuously polymd. at 120°/7 kg/cm<sup>2</sup>, stirring rate 500 rpm, and residence time 2.5 min to give an emulsion of excellent stability in freeze-thaw cycles, while batch processes gave gels.

91:58060q Dispersing agents for suspension polymerization of vinyl chloride. Funami, Haruo; Nomoto, Kunio (Denki Kagaku Kogyo K. K.) Jpn. Kokai Tokkyo Koho 79 33,580 (Cl. C08F2/20), 12 Mar 1979, Appl. 77/99,147, 19 Aug 1977; 4 pp. Sapond. vinyl acetate copolymer (65-85 mol% sapon., av. d.p. 300-2500) having cloud point (4% aq. soln.) >60° is used as a dispersing agent for polymn. of vinyl chloride (I). Thus, 1:100 acrylic acid-vinyl acetate copolymer having d.p. 1400 was sapon. to 71.9 mol% to give a copolymer (II) [37768-21-1] having cloud point 70°. A mixt. of bis(2-ethylhexyl) peroxodi-carbonate 5, azobis(2,4-dimethylvaleronitrile) 5, H<sub>2</sub>O 180,000, II 50, and I 60,000 g was stirred at 57° to give PVC [9002-86-2] granules contg. 0.8% of 200 mesh passing powder. When a compn. of the PVC 100, DOP 50, epoxidized soybean oil 5, stabilizers 3, lubricants 0.5, Ba stearate 0.8, TiO<sub>2</sub> 0.5, and carbon black 0.05 part was rolled 3 and 6 min at 145°, the 0.25-mm sheets contained 100 and 0 fisheyes/100 cm<sup>2</sup>, resp., compared with 100 and 10, resp., for similar PVC prep'd. in the presence of 72.5 mol% sapond. poly(vinyl acetate) having d.p. 1180 and cloud point 24°.

91:58061r Diphenyl oxide-formaldehyde resin. Dow Chemical Co. Jpn. Kokai Tokkyo Koho 79 46,731 (Cl. C07C43/20), 12 Apr 1979, Appl. 77/110,032, 14 Sep 1977; 4 pp. Ph<sub>2</sub>O was polycondensed with HCHO in the presence of water, monohydroxy compds., and a strong acid. For example, Ph<sub>2</sub>O 300, Me Formcel 300, and 98% H<sub>2</sub>SO<sub>4</sub> 20 g were heated at 1350 for 3.5 h to give 378.5 g resin [26007-63-6].

91:58062s Stable latexes. Ishibashi, Takayuki; Hirai, Haruhiko; Asai, Yukio; Hiraharu, Teruo (Japan Synthetic Rubber Co., Ltd.) Jpn. Kokai Tokkyo Koho 79 33,584 (Cl. C08F236/04), 12 Mar 1979, Appl. 77/99,152, 19 Aug 1977; 9 pp. Monomer mixts. of unsatd. dicarboxylic acid 0.5-5, conjugated dienes 15-80, arom. vinyl compds. 20-80, alkyl (meth)acrylate 0-50, and other comonomers 0-20 wt.-% are emulsion polymd. in such a way that initially the dicarboxylic acid and <40% of the other monomers are polymd., and the balance of the monomers are added to the polymg. mixt. in the form of emulsions of av. particle diam. <25  $\mu$ , to give stable emulsions. Thus, a mixt. of butadiene 32, styrene 60, and Me methacrylate 5 parts and a mixt. of acrylic acid 1, Na alkylbenzenesulfonate 0.45, and H<sub>2</sub>O 45 parts were charged through a pipe line homogenizer at 2500 rpm to an autoclave contg. H<sub>2</sub>O 85, itaconic acid 2, K<sub>2</sub>S<sub>2</sub>O<sub>8</sub> 1.4, K<sub>3</sub>PO<sub>4</sub> 0.7, Na ethylenediamine=tetraacetate 0.06, Na alkylbenzenesulfonate 0.05, and n-dodecyl mercaptan 0.5 part at 70° for 10 h and stirred 3 h addnl. to give

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